ALCATEL-LUCENT OMNISWITCH 6855

HARDENED LAN SWITCH

Alcatel-Lucent OmniSwitch™ 6855 Hardened LAN Switch (HLS) models are industrial grade, managed, Gigabit and 10 Gigabit Ethernet switches designed to operate reliably in harsh electrical environments and severe temperatures. This superior, rugged hardware design, coupled with the widely deployed and field-proven Alcatel-Lucent Operating System (AOS), makes the OmniSwitch 6855 ideal for industrial and mission-critical applications that require wider operating temperature ranges, more stringent EMC/EMI requirements and an optimized feature set for high security, reliability, performance and easy management.

The target applications for these versatile LAN switches are power utilities, transportation and traffic control systems, industrial factory floor installations, video surveillance systems and outdoor installations, all of which require gigabit backbone connectivity.

FEATURES	BENEFITS
Ruggedized hardware design	Operates at a wider temperature range from -40°C to +75°C, withstands greater shock, vibrations, temperature and EMI/EMC tests
Convection cooling for fanless models or temperature triggered fans for 24 port models	Increased reliability, and lower acoustic levels
Power over Ethernet (PoE) support on all copper models	Enables converged applications by providing power to IP phones, surveillance cameras, and wireless access points
Redundancy at all levels including power supplies, software and hot-swappable Small Form Factor Pluggable (SFP) modules	A field-upgradeable solution that makes the network highly available and reduces operating expenses
Wire-rate switching and routing at gigabit speeds. Advanced services incorporated in the operating system (OS): quality of service (QoS), access control lists (ACLs), L2/L3, VLAN stacking, and IPv6	Outstanding performance when supporting real-time voice, data, and video applications for converged scalable networks
Extensive security features for network access control (NAC), policy enforcement and attack containment	Fully secures the network at the edge, at no additional cost
Hardware-based virtual routing and forwarding (VRF) support on OmniSwitch 6855-U24X	Enterprise-wide cost reduction through hardware consolidation to achieve network segmentation and security without additional hardware installation
Advanced, out-of-the-box auto-configuration, Link Layer Discovery Protocol (LLDP) network policies and dynamic VLAN allocation	Automated switch setup and configuration, and end-to-end VLAN provisioning support cost-effective installation and deployment
Ready for Metro Ethernet access: VLAN stacking, multicast switching, Dynamic Host Configuration Protocol (DHCP) snooping/ option 82, ITU-T Y.1731, IEEE 802.1ag, IEEE 802.3ah and MAC-Forced Forwarding (MEF 9/14 compliant)	Simplifies Metro Ethernet network OA&M for service providers

Alcatel-Lucent OmniSwitch 6855 models

The OmniSwitch 6855 family offers customers an extensive selection of Gigabit and 10 Gigabit Ethernet fixed-configuration switches and power supply options that accommodate most needs. Models offered include industrial-strength PoE and non-PoE models in a 1U form factor.

Combo ports are ports individually configurable to be 10/100/1000 Base-T or 1000Base-X, which support SFP transceivers for short, long and very long distances.

Fiber models with 10 Gigabit Ethernet

OmniSwitch 6855-U10

- Eight SFP ports
- Two RJ-45 10/100/1000 copper ports
- Fanless design

OmniSwitch 6855-U24X

- Two 10 Gigabit Ethernet SFP+ ports for stacking or uplinks
- 22 SFP ports
- Two combo ports
- Up to four units in a stack

Copper models with POE

OmniSwitch 6855-14

- 12 10/100/1000 RJ-45 copper ports
- Four PoE-capable ports
- Two SFP ports
- Fanless design

OmniSwitch 6855-P14

- 12 10/100/1000 RJ-45 copper ports
- 12 PoE-capable ports
- Two SFP ports
- Fanless design

OmniSwitch 6855-24

- 20 10/100/1000 RJ-45 copper ports
- Four PoE-capable ports
- Four combo ports

All PoE models support 15.4 W per port PoE (compliant with IEEE 802.3af standard).

TECHNICAL SPECIFICATIONS

	OS6855-P14	OS6855-14	OS6855-24	OS6855-U10	OS6855-U24X
NUMBER OF PORTS					
Maximum 10 Gigabit Ethernet	0	0	0	0	2
Maximum 10/100/100Base-T RJ-45	12	12	24	2	2
Maximum SFP connectors	2	2	4	8	24
PoE	12	4	4	0	0
Combo	0	0	4	0	2
PHYSICAL DIMENSIONS					
Width	21.6 cm (8.50 in)	21.6 cm (8.50 in)	43.8 cm (17.25 in)	21.6 cm (8.50 in)	43.8 cm (17.25 in)
Height	4.4 cm (1.73 in)	4.4 cm (1.73 in)	4.4 cm (1.73 in)	4.4 cm (1.73 in)	4.4 cm (1.73 in)
Depth (no PS shelf attached)	26 cm (10.25 in)	26 cm (10.25 in)	27.4 cm (10.78 in)	26 cm (10.25 in)	27.4 cm (10.78 in)
Depth (with PS shelf attached)	44.5 cm (17.50 in)	44.5 cm (17.50 in)	44.8 cm (17.60 in)	44.5 cm (17.50 in)	44.8 cm (17.60 in)
Weight (no PS)	2.7 kg (5.96 lb)	2.42 kg (5.28 lb)	3.78 kg (8.34 lb)	2.42 kg (5.28 lb)	5.3 kg (11.68 lb)
Weight (with one PS and tray)	3.83 (8.44 lb)	3.55 kg (7.82 lb)	5.35 kg (11.8 lb)	3.55 kg 82 lb)	6.87 kg (15.14 lb)
ENVIRONMENT					
Operating temperature	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +75°C (-40°F to +167°F)	-40°C to +70°C (-40°F to +158°F)	-40°C to +70°C (-40°F to +158°F)
Storage temperature	-40°C to +85°C (-40°F to +185°F)	-40°C to +85°C (-40°F to +185°F)	-40°C to +85°C (-40°F to +185°F)	-40°C to +85°C (-40°F to +185°F)	-40°C to +85°C (-40°F to +185°F)
Humidity (operating and storage)	5% to 95%	5% to 95%	5% to 95%	5% to 95%	5% to 95%
MTBF* (hours)	387,985	430,389	529,644	508,942	373,980
Fanless design	Yes	Yes	No	Yes	Yes ***
Acoustic (dB) at <50°C	silent	silent	33	silent	silent
Acoustic (dB) – all fans on	n/a	n/a	57	n/a	n/a
Power consumption ****	33.5W	30 W	46 W	25 W	51 W
Heat dissipation ** (BTU/hr)	114.3	102.4	157	85.3	174

* MTBF values calculated at 25°C (77°F) for the switch only
** Sufficient spacing required for airflow and heat dissipation
*** The OS6855-U24X chassis is fanless. The external DC power supplies have fans.
**** Power consumption was measured from the AC input power using nominal input voltage of 120 V AC and running full traffic on all ports.

Gigabit fiber interfaces on the OmniSwitch 6855-U10 and OmniSwitch 6855-U24X models support Gigabit SFP or 100Base-X SFP optical transceivers. See the full list of supported transceivers at the end of the data sheet.

Power supplies

OmniSwitch 6855 models support redundant, hot-swappable AC, DC or PoE power supplies. The primary and the backup power supply units are external, allowing for easier maintenance and replacement.

There is no interruption of service when a new power supply is installed or an old one replaced.

Power supplies for OmniSwitch 6855-14, OmniSwitch 6855-P14 and OmniSwitch 6855-U10

The power supplies for the half rack models come in the form of a power brick in either AC or DC variant. A separate power brick provides PoE power and is available for purchase when PoE is required.

Any power supply can be remotely connected using a cable, which enables rack mounting using the mounting ears provided with the unit. This feature allows for space-sensitive installations requiring reduced depth (for example, in a wall-mounted cabinet).

Indicators

- Per-port LEDs: link/activity/PoE
- System LEDs: OK (switch HW/SW status)
- PS1/PS2: primary and/or redundant power supply status
- 7-segment LED on OS6855-U24X indicating the operational mode and stack number

POWER SUPPLY MODELS	DESCRIPTION			
OS6855-PSS	PSU for OS6855-14 and OS6855-U10; 90 V to 240 V AC, 50 Hz to 60 Hz AC; 40 W, 12 V, AC-DC			
OS6855-PSS-P	PSU for PoE on OS6855-14; 66 W, 48 V PoE, AC-DC			
OS6855-PSS-D	PSU for 6855-14 and OS6855-U10; 40 W, -48 V and 24 V input to 12 V DC-DC			
OS6855-PSS-P-D	PSU for PoE on OS6855-14; 66 W, -48 V input DC-DC			
OS6855-PSSPH	PSU for PoE on OS6855-P14; 185W PoE, AC-DC			
SPECIFICATION	WEIGHT	DEPTH	WIDTH	HEIGHT
OS6855-PSS OS6855-PSS-P OS6855-PSS-D	0.65 kg (1.3 lb)	14 cm (5.5 in)	8.1 cm (3.2 in)	4.1 cm (1.6 in)
OS6855-PSS-P-D	0.5 kg (1.1 lb)	16.6 cm (6.53 in)	8 cm (3.15 in)	4.4 cm (1.73 in)
OS6855-PSSPH	1.03kg(2.27 lb)	11.35 cm (4.47 in)	6.3 cm (2.48 in)	12.52 cm (4.93 in)
Power brick tray	0.5 kg (1.35 lb)	19.1 cm (7.5 in)	21.6 cm (8.5 in)	4.4 cm (1.73 in)

COMPLIANCE AND CERTIFICATIONS

Commercial

EMI/EMC

- FCC CRF Title 47 Subpart B (Class A)
- VCCI (Class A)
- AS/NZS 3548 (Class A)
- CE marking for European countries (Class A)
- EN 55022:2006 (Emission Standard)
- EN 61000-3-3:1995 +A2:2005
- EN 61000-3-2:2006
- EN 55024:1998 +A1:2001 +A2:2003 (Immunity Standards)
  - ¬ EN 61000-4-2: 1995+A1:1998 +A2:2001
  - ¬ EN 61000-4-3:2006
  - ¬ EN 61000-4-4:2004
  - ¬ EN 61000-4-5:2006
  - ¬ EN 61000-4-6:2007
  - ¬ EN 61000-4-8:1993 +A1:2001
  - ¬ EN 61000-4-11:2004
- IEEE802.3: Hi-Pot Test (2250 V DC on all Ethernet ports)
- EN 50121-4

NEBS**

- GR-63-CORE (temperature, humidity, altitude, contamination)
- GR-1089-CORE Issue 4 (section 2-3)
- GR-1089-CORE Issue 4 (section 3.2, 4-10)

Industrial

- IEC 60870-2-2 (operational temperature)
- IEC 60068-2-1 (temperature type test – cold)
- IEC 60068-2-2 (temperature type test – hot)
- IEC 60721-3-1: Class 1K5 (storage temperature)
- IEC 68-2-30: 5% to 95% non-condensing humidity
- IEC 60255-21-2 (mechanical shock)
- IEC 60255-21-1 (vibration)

EMI/EMC

- EN 61131-2
- EN 61000-6-4 :2007 (emission)
- EN 61000-6-2 :2005 (immunity)
- EN 55024: 1998 (Immunity)
  - ¬ IEC 61000-4-3
  - ¬ IEC 61000-4-12
  - ¬ IEC 61000-4-16
  - ¬ IEC 61000-4-17
  - ¬ IEC 61000-4-29
- IEC 60255-5
- IEC 61850-3 (Electric Power Substations)
- IEC 62236-4:2008 – Railway applications: Electromagnetic compatibility – Part 4
- EN 50121-4:2006 for Class A device
- IEEE 1613 (C37.90.x)
- C37.90.3 (ESD)
- C37.90.2 (Radiated RFI)
- IEEE 1613 C37.90.1 (Fast Transient)
- IEEE 1613 C37.90.1 (Oscillatory)
- IEEE 1613 C37.90 (H.V. Impulse)
- IEEE 1613 C37.90 (Dielectric Strength)

Military

- MIL-STD-810F (shock and vibration)***
- MIL-STD-901D (shock)**
- MIL-STD-167-1 (vibration)**
- MIL-STD-810F**: Methods 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 512, 514, 515, 516, 520, 521
- MIL-STD-461E**: CE101, CE102, CS101, CS114, CS115, CS116, RE101, RE 102, RS101, RS103

Safety agency certifications

- US UL 60950
- IEC 60950-1:2001; all national deviations
- EN 60950-1: 2001; all deviations
- CAN/CSA-C22.2 No. 60950-1-03
- NOM-019 SCFI, Mexico
- AS/NZ TS-001 and 60950:2000, Australia
- UL-AR, Argentina
- UL-GS Mark, Germany
- EN 60825-1 Laser
- EN 60825-2 Laser
- CDRH Laser

* Note: Class A with UTP cables.
** Contact for availability
*** All models except OS6855-P14 are MIL-810F compliant

DETAILED PRODUCT FEATURES

Interface and speeds

Switching capacity

- OS6855-U10/-U10D: 10 Gbps Full Duplex or 20 Gbps aggregate
- OS6855-14/-14D/ -P14: 14 Gbps Full Duplex or 28 Gbps aggregate
- OS6855-24/-24D/-24DL: 24Gbps Full Duplex or 48Gbps aggregate
- OS6855-U24X/-U24XD/-U24XDL: 48Gbps Full Duplex or 96Gbps aggregate

Layer 2 throughput (Mp/s)

- OS6855-U10/-U10D : 14.9 Mp/s
- OS6855-14/-14D/-P14 : 20.8 Mp/s
- OS6855-24/-24D/-24DL : 35.7 Mp/s
- OS6855-U24X/-U24XD/-U24XDL: 65.5 Mp/s

Layer 2 switching

- Maximum number of configured VLANs: 4K
- Maximum MAC addresses per system : 16K
- Jumbo frame support: 9216 bytes

Simplified manageability

Management interfaces

- Intuitive, familiar Alcatel-Lucent CLI reduces training costs
- Easy to use, point-and-click, web-based element manager (WebView) with built-in help for easy configuration
- Integrated with Alcatel-Lucent OmniVista™ products for network management
- Full configuration and reporting using SNMPv1/2/3 across all OmniSwitch families to facilitate third-party network management system integration
- Remote switch access using Telnet or Secure Shell (SSH)
- File upload using USB, TFTP, FTP, SFTP, or SCP for faster configuration
- Human-readable ASCII-based configuration files for off-line editing, bulk configuration and out-of-the-box auto-provisioning

Monitoring and troubleshooting

- Local (on the flash) and remote server logging: Syslog and command log
- Port-based mirroring for trouble-shooting and lawful interception; supports four sessions with multiple sources-to-one destination
- Policy-based mirroring allows selection of the type of traffic to mirror by using QoS policies
- Remote port mirroring facilitates passing mirrored traffic through the network to a remotely connected device
- Port monitoring feature allows capture of Ethernet packets to a file to assist in troubleshooting
- sFlow v5 and RMON for advanced monitoring and reporting capabilities for statistics, history, alarms and events
- IP tools: ping and trace route
- Y.1731 and IEEE 802.1ag Ethernet operations, administration and maintenance (OA&M): Connectivity Fault Management and performance measurements (layer-2 ping and link trace)
- IEEE 802.3ah Ethernet in the First Mile (EFM) for link monitoring, remote fault detection, and loop-back control (layer-1 ping)
- Unidirectional Link Detection (UDLD) detects and disables unidirectional links on fiber optic interfaces.
- Digital Diagnostic Monitoring (DDM): Real-time diagnostics of fiber connections for early detection of optical signal deterioration
- Link Monitoring: link flap detection and link error counts to identify bad connections and automatically make adjustments to use the links that are good
- Time Domain Reflectometry (TDR): used for locating break or other discontinuity in copper cables.

Network configuration

- Auto-negotiating 10/100/1000 ports automatically configure port speed and duplex setting
- Auto MDI/MDIX automatically configures transmit and receive signals to support straight-through and crossover cabling
- BOOTP/DHCP client with option 60 allows auto-configuration of the switch for simplified deployment
- DHCP relay to forward client requests to a DHCP server
- Alcatel-Lucent Mapping Adjacency Protocol (AMAP) for building topology maps
- IEEE 802.1AB LLDP with MED extensions for automated device discovery and IP phone provisioning
- Multiple VLAN Registration Protocol (MVRP) and GARP VLAN Registration Protocol (GVRP) for 802.1Q/1ak-compliant VLAN pruning and dynamic VLAN creation
- Auto-QoS for switch management and IP phone traffic
- Network Time Protocol (NTP) for network-wide time synchronization

Resiliency and high availability

- ITU-T G.8032 Ethernet Ring Protection designed for loop protection and fast convergence times (sub 50 ms) in ring topologies
- Ring Rapid Spanning Tree Protocol (RRSTP) optimized for ring topology to provide less than 100-ms convergence time
- IEEE 802.1s Multiple Spanning Tree Protocol (MSTP) encompasses IEEE 802.1D Spanning Tree Protocol (STP) and IEEE 802.1w Rapid Spanning Tree Protocol (RSTP)
- Per-VLAN spanning tree (PVST+) and Alcatel-Lucent 1x1 STP mode
- IEEE 802.3ad Link Aggregation Control Protocol (LACP) and static LAG groups across modules
- Dual-home link support for sub-second link protection without STP
- Virtual Router Redundancy Protocol (VRRP) to provide highly available routed environments
- Bidirectional Forwarding Detection (BFD) for fast failure detection and reduced re-convergence times in a routed environment
- Broadcast, unknown unicast and multicast storm control to avoid degradation in overall system performance
- Redundant and hot-swappable power supplies, transceivers modules offering uninterruptable service
- Dual image and dual configuration file storage provides backup
- Stacking capability (OS6855-U24X only) for virtual chassis redundancy. Up to 10-km fault-tolerant remote stacking supported.

Advanced security

Access control

- AOS Access Guardian framework for comprehensive user-policy-based network access control (NAC)
- Autosensing 802.1X multi-client, multi-VLAN support
- MAC-based authentication for non-802.1x hosts
- Web based authentication (captive portal): A customizable web portal residing on the switch
- IEEE 802.1X and MAC-based authentication, with group mobility and "guest" VLAN support
- Host integrity check (HIC) agent on each switch makes it an HIC enforcer and facilitates endpoint device control for company policy compliance; quarantine and remediation are supported as required
- User Network Profile (UNP) simplifies NAC by dynamically providing pre-defined policy configuration to authenticated clients – VLAN, ACL, bandwidth, HIC
- SSH for secure CLI session with public key infrastructure (PKI) support
- TACACS+ client allows for authentication authorization and accounting (AAA) with a remote TACACS+ server
- Centralized RADIUS and Light-weight Directory Access Protocol (LDAP) user authentication

Containment, monitoring and quarantine

- Support for Alcatel-Lucent OmniVista 2500 Quarantine Manager and quarantine VLAN
- Learned Port Security (LPS) or MAC address lockdown secures the network access on user or trunk ports based on MAC address
- DHCP Snooping, DHCP IP and Address Resolution Protocol (ARP) spoof protection
- Embedded traffic anomaly detection (TAD) monitors traffic patterns typical for worm-like viruses and either shuts down the port or reports to the management system
- ARP poisoning detection
- IP Source Filtering as a protective and effective mechanism against ARP attacks
- ACLs to filter out unwanted traffic including denial of service (DoS) attacks; flow-based filtering in hardware (layer 1 to layer 4)
- Support of Microsoft® Network Access Protection (NAP)
- Bridge Protocol Data Unit (BPDU) blocking automatically shuts down user ports to prevent topology loops if an STP BPDU packet is seen
- STP Root Guard prevents edge devices from becoming STP root nodes
- LLDP Security mechanism for rogue device detection and restriction

Converged networks

PoE

- Dynamic PoE allocation delivers only the power needed by the attached device up to the total power budget for most efficient power consumption
- PoE models support Alcatel-Lucent IP phones and WLAN access points, as well as any IEEE 802.3af-compliant end device
- Configurable per-port PoE priority and max power for power allocation

QoS

- Priority queues: Eight hardware-based queues per port for flexible QoS management
- Traffic prioritization: Flow-based QoS with internal and external prioritization (also known as re-marking)
- Bandwidth management: Flow-based bandwidth management, ingress rate limiting; egress rate shaping per port
- Queue management: Configurable scheduling algorithms: Strict Priority Queuing (SPQ), Weighted Round Robin (WRR) and Deficit Round Robin (DRR)
- Congestion avoidance: Support for End-to-End Head-of-Line (E2E-HOL) blocking prevention and flow control
- LLDP network polices for dynamic designation of VLAN-ID and layer-2/layer-3 priority for IP phones
- Auto-QoS for switch management traffic as well as traffic from Alcatel-Lucent IP phones

Layer-3 routing and multicast

IPv4 routing

- Multiple VRF for network segmentation
- Static routing, Routing Information Protocol (RIP) v1 and v2
- Open Shortest Path First (OSPF) v2, Border Gateway Protocol (BGP) v4
- Generic Routing Encapsulation (GRE) and IP/IP tunneling
- Graceful restart extensions for OSPF and BGP
- VRRP v2
- DHCP relay (including generic UDP relay)
- ARP

IPv6 routing

- Static routing
- Routing Information Protocol Next Generation (RIPng)
- OSPF v3
- BGP v4 (with extensions to IPv6 routing)
- Graceful restart extensions for OSPF and BGP
- VRRP v3
- Neighbor Discovery Protocol (NDP)

IPv4/IPv6 multicast

- Internet Group Management Protocol (IGMP) v1/v2/v3 snooping for optimized multicast traffic
- Protocol Independent Multicast – Sparse Mode (PIM-SM)/Protocol Independent Multicast – Dense Mode (PIM-DM)
- Distance Vector Multicast Routing Protocol (DVMRP)
- Multicast Listener Discovery (MLD) v1/v2 snooping for optimized multicast traffic

Metro Ethernet access

- Ethernet services support per IEEE 802.1ad Provider Bridge services (also known as Q-in-Q or VLAN stacking):
  - ¬ Service VLAN (SVLAN) and Customer VLAN (CVLAN) transparent LAN services
  - ¬ Ethernet network-to-network interface (NNI) and user network interface (UNI) services
  - ¬ Service Access Point (SAP) profile identification
  - ¬ CVLAN to SVLAN translation and mapping
- Ethernet OA&M compliant with ITU Y.1731 and IEEE 802.1ag version 8.1 for connectivity fault and performance management and IEEE 802.3ah EFM for link OA&M
- Service Assurance Agent (SAA) for SLA compliance validation
- MAC-Forced Forwarding support according to RFC 4562
- Private VLAN feature for user traffic segregation
- DHCP Option 82: Configurable relay agent information
- IP Multicast VLAN (IPMVLAN) for optimized multicast replication at the edge saving network core resources
- Optimized Ethernet access services delivery
  - ¬ Network bandwidth protection against overload of video traffic
  - ¬ Multicast streams isolation from multiple content providers over the same interface
- MEF 9 and 14 certified
- Managed by Alcatel-Lucent 5620 Service Aware Manager

SUPPORTED STANDARDS

IEEE standards

- IEEE 802.1D (STP)
- IEEE 802.1p (CoS)
- IEEE 802.1Q (VLANs)
- IEEE 802.1ad (Provider Bridges)
- IEEE 802.1ag (Connectivity Fault Management)
- IEEE 802.1ak (Multiple VLAN Registration Protocol)
- IEEE 802.1s (MSTP)
- IEEE 802.1w (RSTP)
- IEEE 802.1X (Port-based Network Access Control)
- IEEE 802.3i (10Base-T)
- IEEE 802.3u (Fast Ethernet)
- IEEE 802.3x (Flow Control)
- IEEE 802.3z (Gigabit Ethernet)
- IEEE 802.3ab (1000Base-T)
- IEEE 802.3ac (VLAN Tagging)
- IEEE 802.3ad (Link Aggregation)
- IEEE 802.3ae (10G Ethernet)
- IEEE 802.3af (Power over Ethernet)

ITU-T standards

- ITU-T G.8032: Draft (June 2007) Ethernet Ring Protection
- ITU-T Y.1731 OA&M fault and performance management

IETF standards

IPv4

- RFC 2003 IP/IP Tunneling
- RFC 2784 GRE Tunneling

OSPF

- RFC 1253/1850/2328 OSPF v2 and MIB
- RFC 1587/3101 OSPF NSSA Option
- RFC 1765 OSPF Database Overflow
- RFC 2154 OSPF MD5 Signature
- RFC 2370/3630 OSPF Opaque LSA
- RFC 3623 OSPF Graceful Restart

RIP

- RFC 1058 RIP v1
- RFC 1722/1723/1724/2453/1724 RIP v2 and MIB
- RFC 1812/2644 IPv4 Router Requirements
- RFC 2080 RIPng for IPv6

BGP

- RFC 1269/1657 BGP v3 & v4 MIB
- RFC 1403/1745 BGP/OSPF Interaction
- RFC 1771-1774/2842/2918/3392 BGP v4
- RFC 1965 BGP AS Confederations
- RFC 1966 BGP Route Reflection
- RFC 1997/1998 BGP Communities Attribute
- RFC 2042 BGP New Attribute
- RFC 2385 BGP MD5 Signature
- RFC 2439 BGP Route Flap Damping
- RFC 2545 BGP-4 Multiprotocol Extensions for IPv6 Inter-Domain Routing
- RFC 2796 BGP Route Reflection
- RFC 2858 Multiprotocol Extensions for BGP-4
- RFC 3065 BGP AS Confederations

IP multicast

- RFC 1075 DVMRP
- RFC 1112 IGMP v1
- RFC 2236/2933 IGMP v2 and MIB
- RFC 2362/4601 PIM-SM
- RFC 2365 Multicast
- RFC 2710 – Multicast Listener Discovery for IPv6
- RFC 2715/2932 Multicast Routing MIB
- RFC 2934 PIM MIB for IPv4
- RFC 3376 IGMPv3
- RFC 5060 Protocol Independent Multicast MIB
- RFC 5132 IP Multicast MIB
- RFC 5240 PIM Bootstrap Router MIB

IPv6

- RFC 1886/3596 DNS for IPv6
- RFC 2292/2553/3493/3542 IPv6 Sockets
- RFC 2373/2374/3513/3587 IPv6 Addressing
- RFC 2460//2462/2464 Core IPv6
- RFC 2461 NDP
- RFC 2463/2466/4443 ICMP v6 and MIB
- RFC 2452/2454 IPv6 TCP/UDP MIB
- RFC 2893/4213 IPv6 Transition Mechanisms
- RFC 3056 IPv6 Tunneling
- RFC 3542/3587 IPv6
- RFC 3595 TC for Flow Label
- RFC 4007 IPv6 Scoped Address Architecture
- RFC 4193 Unique Local IPv6 Unicast Addresses

Manageability

- RFC 854/855 Telnet and Telnet options
- RFC 959/2640 FTP
- RFC 1155/2578-2580 SMI v1 and SMI v2
- RFC 1157/2271 SNMP
- RFC 1212/2737 MIB and MIB-II
- RFC 1213/2011-2013 SNMP v2 MIB
- RFC 1215 Convention for SNMP Traps
- RFC 1350 TFTP Protocol
- RFC 1573/2233/2863 Private Interface MIB
- RFC 1643/2665 Ethernet MIB
- RFC 1901-1908/3416-3418 SNMP v2c
- RFC 2096 IP MIB
- RFC 2131 DHCP server/client
- RFC 2570-2576/3411-3415 SNMP v3
- RFC 2616 /2854 HTTP and HTML
- RFC 2667 IP Tunneling MIB
- RFC 2668/3636 IEEE 802.3 MAU MIB
- RFC 2674 VLAN MIB
- RFC 3414 User based Security model
- RFC 4251 Secure Shell Protocol architecture
- RFC 4252 The Secure Shell (SSH) Authentication Protocol
- RFC 4878 OA&M Functions on Ethernet-Like Interfaces

Security

- RFC 1321 MD5
- RFC 2104 HMAC Message Authentication
- RFC 2138/2865/2868/3575/2618 RADIUS Authentication and Client MIB
- RFC 2139/2866/2867/2620 RADIUS Accounting and Client MIB
- RFC 2228 FTP Security Extensions
- RFC 2267 Network Ingress Filtering
- RFC 2284 PPP EAP
- RFC 2869/2869bis RADIUS Extension

QoS

- RFC 896 Congestion Control
- RFC 1122 Internet Hosts
- RFC 2474/2475/2597/3168/3246 DiffServ
- RFC 2697 srTCM
- RFC 2698 trTCM
- RFC 3635 Pause Control

Others

- RFC 768 UDP
- RFC 791/894/1024/1349 IP and IP/Ethernet
- RFC 792 ICMP
- RFC 793/1156 TCP/IP and MIB
- RFC 826/903 ARP and Reverse ARP
- RFC 919/922 Broadcasting internet datagram
- RFC 925/1027 Multi LAN ARP / Proxy ARP
- RFC 950 Subnetting
- RFC 951 BOOTP
- RFC 1151 RDP
- RFC 1191/1981 Path MTU Discovery
- RFC 1256 ICMP Router Discovery
- RFC 1305/2030 NTP v3 and Simple NTP
- RFC 1493 Bridge MIB
- RFC 1518/1519 CIDR
- RFC 1541/1542/2131/3396/3442 DHCP
- RFC 1757/2819 RMON and MIB
- RFC 2131/3046 DHCP/BOOTP Relay
- RFC 2132 DHCP Options
- RFC 2251 LDAP v3
- RFC 2338/3768/2787 VRRP and MIB
- RFC 3021 Using 31-bit prefixes
- RFC 3060 Policy Core
- RFC 3176 sFlow
- RFC 4562 MAC-Forced Forwarding

OMNISWITCH 6855 ORDERING

PART NUMBER	DESCRIPTION
OMNISWITCH 6855 MODELS	
OS6855-14 OS6855-14D	Layer-3 fixed-configuration fanless switch in a 1U form factor. It has 12 RJ-45 connectors individually configurable to 10/100/1000Base-T, four of which are PoE–capable, and two SFP ports that support various distances. An OS6855-PSS or OS6855-PSS-D power supply respectively is included in the bundle.
OS6855-P14	Layer-3 fixed-configuration fanless switch in a 1U form factor. It has 12 RJ-45 connectors individually configurable to 10/100/1000Base-T, all of which are PoE capable, and two SFP ports that support various distances. The bundle comes with system power supply (OS6855-PSS), PoE power supply (OS6855-PSSPH), power shelves, and power cord
OS6855-U10 OS6855-U10D	Layer-3 fixed-configuration fanless switch in a 1U form factor. It has two RJ-45 connectors individually configurable to 10/100/1000Base-T, and eight SFP ports that support various distances. An OS6855-PSS or OS6855-PSS-D power supply respectively is included in the bundle.
OS6855-24 OS6855-24DL OS6855-24D	Layer-3 fixed-configuration switch in a 1U form factor. It has 20 RJ-45 connectors individually configurable to 10/100/1000Base-T, four of which provide PoE and four combo ports. On the combo ports, either copper or fiber can be used on a one-for-one basis. An OS6855-PSL-P, OS6855-PSL-D or OS6855-PSL-DL power supply respectively is included in the bundle.
OS6855-U24X OS6855-U24XDL OS6855-U24XD	Layer-3 fixed-configuration switch in a 1U form factor. It has two 10G SFP+ ports, 22 SFP ports that support various distances, and two combo ports. On the combo ports, either RJ-45 connectors individually configurable to 10/100/1000Base-T, or fiber SFP can be used on a one-for-one basis. The 10G SFP+ ports can be used either as uplinks or as stacking ports. An OS6855-PSL, OS6855-PSL-DL or OS6855-PSL-D power supply respectively is included in the bundle.
TRANSCEIVERS	All optical transceivers qualified for the OmniSwitch 6855 operate at a wider operating temperature range than the corresponding commercial types.
iSFP-10G-LR	10G industrial optical transceiver (SFP+). Supports single-mode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 10 km.
iSFP-GIG-LH70	1000Base-LH industrial transceiver. Supports single-mode fiber over 1550 nm wavelength (nominal) with an LC connector. Typical reach of 70 km.
iSFP-GIG-LH40	1000Base-LH industrial transceiver Supports single-mode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 40 km.
iSFP-GIG-LX	1000Base-LX industrial transceiver Supports single-mode fiber over 1310 nm wavelength (nominal) with an LC connector. Typical reach of 10 km.
iSFP-GIG-SX	1000Base-SX industrial transceiver. Supports multimode fiber over 850 nm wavelength (nominal) with an LC connector. Typical reach of 300 m.
iSFP-GIG-T	1000Base-T Gigabit industrial Ethernet Transceiver (SFP MSA). Supports category 5, 5E, and 6 copper cabling up to 100 m. SFP supports 10/100/1000 Mb/s and full-duplex mode.
iSFP-GIG-BX-U	1000Base-BX SFP transceiver with an LC type interface. Supports single-mode fiber on a single strand link up to 10 km. Transmits 1310 nm and receives 1490 nm optical signal.
iSFP-GIG-BX-D	1000Base-BX SFP transceiver with an LC type interface. Supports single-mode fiber on a single strand link up to 10 km. Transmits 1490 nm and receives 1310 nm optical signal.
iSFP-100-MM	100Base-FX industrial transceiver with an LC type interface. This transceiver is designed for use over multimode fiber.
iSFP-100-SM15	100Base-FX industrial transceiver with an LC type interface. This transceiver is designed for use over single-mode fiber up to 15 km.
iSFP-100-SM40	100Base-FX industrial transceiver with an LC type interface. This transceiver is designed for use over single-mode fiber up to 40 km.
iSFP-100-BX-U	100Base-BX industrial transceiver with an SC type interface. This bidirectional transceiver is designed for use over single-mode fiber on a single strand link up to 20 km point-to-point. This transceiver is normally used in the client (ONU) and transmits 1310 nm and receives 1550 nm optical signal.
iSFP-100-BX-D	100Base-BX industrial SFP transceiver with an SC type interface. This bidirectional transceiver is designed for use over single mode fiber on a single strand link up to 20 km point-to-point. This transceiver is normally used in the central office (OLT) and transmits 1550 nm and receives 1310 nm optical signal.

SERVICE AND SUPPORT

Warranty

Limited lifetime hardware warranty: Limited to the original owner, and will be provided for up to 5 years after the product's End-of-Sales announcement.

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